CLAIMS

1. A cosmid vector characterized by:

(1) containing an adenoviral genome having adenoviral inverted terminal repeat sequences each having a complete nucleotide sequence,

(2) having a deletion in an adenovirus E1 gene region, and

(3) containing a restriction enzyme recognition sequence not present in the adenoviral genome, on both sides of the adenoviral genome.

2. The cosmid vector according to claim 1, characterized by comprising a drug resistant gene, a replication origin, a spacer sequence and a COS region, in addition to the adenoviral genome.

3. The cosmid vector according to claim 2, characterized in that the drug resistant gene and the replication origin are present between a left-inverted terminal repeat sequence of the adenoviral genome and the spacer sequence.

4. The cosmid vector according to claim 3, characterized in that the drug resistant gene, the replication origin, the spacer sequence and the COS region are arranged in this order from outside of the left-inverted terminal repeat sequence of the adenoviral genome toward a right inverted terminal repeat sequence.

5. The cosmid vector according to any one of claims 1 to 4, comprising TTCGAA as a restriction

enzyme recognition sequence present on both sides of the adenoviral genome.

6. The cosmid vector according to claim 5, characterized in that the restriction enzyme which recognizes TTCGAA is Csp45I, BspT104I or BstBI.

7. The cosmid vector according to any one of claims 1 to 6, comprising a nucleotide sequence which recognizes a restriction enzyme, the sequence for inserting a foreign gene into an E1 gene deletion site.

8. The cosmid vector according to claim 7, characterized in that the restriction enzyme is SwaI.

9. The cosmid vector according to claim 7 or 8, further comprising a CAG promoter or an EF-1α promoter in the E1 gene deletion site.

10. A method of generating a recombinant adenoviral vector characterized by comprising digesting the cosmid vector according to any one of claims 1 to 9 with a restriction enzyme and transforming a cell with the cosmid vector.

11. The method of generating a recombinant adenoviral vector according to claim 10, characterized in that the restriction enzyme is Csp45I, BspT104I or BstBI.

12. A reagent for generating a recombinant adenoviral vector comprising the cosmid vector according to any one of claims 1 to 9 as a component.

13. A cosmid vector or plasmid vector characterized by:

(1) containing an adenoviral genome having adenoviral inverted terminal repeat sequences each having a complete nucleotide sequence,

(2) having a deletion in an adenovirus E1 gene region, and

(3) containing multiple kinds of restriction enzyme recognition sequences not present in the adenoviral genome, on both sides of the adenoviral genome.

14. The vector according to claim 13, comprising, on both sides of the adenoviral genome, at least two kinds of restriction enzyme recognition sequences selected from

(a) TTCGAA recognized by a restriction enzyme Csp45I, BspT104I, or BstBI,

(b) TTAATTAA recognized by a restriction enzyme PacI, and

(c) ATCGAT recognized by a restriction enzyme ClaI or BspDI.

15. The vector according to claim 14, comprising at least

(a) TTCGAA recognized by a restriction enzyme Csp45I, BspT104I, or BstBI, and

(b) TTAATTAA recognized by a restriction enzyme PacI.

16. The vector according to claim 14, comprising at least

(a) TTCGAA recognized by a restriction enzyme of Csp45I, BspT104I, or BstBI, and

(c) ATCGAT recognized by a restriction enzyme ClaI or BspDI.

17. The vector according to claim 13, comprising two kinds of restriction enzyme recognition sequences not present in the adenoviral genome on both sides of the adenoviral genome.

18. The vector according to claim 17, comprising two kinds of restriction enzyme recognition sequences selected from

(a) TTCGAA recognized by a restriction enzyme Csp45I, BspT104I, or BstBI,

(b) TTAATTAA recognized by a restriction enzyme PacI, and

(c) ATCGAT recognized by a restriction enzyme ClaI or BspDI.

19. The vector according to claim 18, comprising

(a) TTCGAA recognized by a restriction enzyme Csp45I, BspT104I, or BstBI, and

(b) TTAATTAA recognized by a restriction enzyme PacI.

20. The vector according to claim 18, comprising

(a) TTCGAA recognized by a restriction enzyme Csp45I, BspT104I, or BstBI, and

(c) ATCGAT recognized by a restriction enzyme ClaI or BspDI.

21. The vector according to claim 13, comprising three kinds of restriction enzyme recognition sequences not present in the adenoviral genome, on both sides of the adenoviral genome.

22. The vector according to claim 21, comprising three kinds of restriction enzyme recognition sequences

(a) TTCGAA recognized by a restriction enzyme of Csp45I, BspT104I, or BstBI,

(b) TTAATTAA recognized by a restriction enzyme PacI, and

(c) ATCGAT recognized by a restriction enzyme ClaI or BspDI.

23. The vector according to any one of claims 13 to 22, comprising a nucleotide sequence recognized by a restriction enzyme, for inserting a foreign gene into an E1 gene deletion site.

24. The vector according to claim 23, characterized in that the restriction enzyme is SwaI.

25. The vector according to claim 23 or 24, further comprising a CAG promoter or an EF-1α promoter in the E1 gene deletion site.

26. The vector according to any one of claims 13 to 25, characterized in that the vector is a cosmid vector.

27. A method of generating a recombinant adenoviral vector characterized by comprising digesting the vector according to any of claims 13 to 26 with a restriction enzyme and transforming a cell with the vector.

28. The method of generating a recombinant adenoviral vector according to claim 27, characterized in that the restriction enzyme is Csp45I, BspT104I, or

BstBI.

29. The method of generating a recombinant adenoviral vector according to claim 27, characterized in that the restriction enzyme is PacI.

30. The method of generating a recombinant adenoviral vector according to claim 27, characterized in that the restriction enzyme is ClaI or BspDI.

31. A reagent for generating a recombinant adenoviral vector, comprising the vector according to any one of claims 13 to 26, as a component.